

REMARKS/ARGUMENTS

Reconsideration of the present application, as amended, is respectfully requested.

Claims 1, 3-7, 9-13 and 15-18 are pending in this application. Claims 1, 7, 13 and 16 have been amended, and claims 2, 8 and 14 have been canceled. Claim 16 was amended to address the Examiner's grammatical concerns.

Previously pending claims 1, 6, 7, 12, 13 and 18 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,894,362, which issued April 13, 1999 to H. Onaka *et al.* Claims 1, 3-5, 7, 9-11 and 15-17 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Publication No. 2002/0048063 A1, which was published April 25, 2002 to Y.C. Jung *et al.* Claims 2, 8 and 14 were rejected under 35 U.S.C. §103(a) as being obvious over the cited Onaka patent in view of U.S. Patent No. 6,441,955, which issued August 27, 2002 to K. Takatsu *et al.* and European Patent Application No. EP 0981212 A1, which was published February 23, 2000 to F. Liden *et al.*

In response to these rejections, the applicants have amended independent claims 1, 7, and 13 to include the respective limitations of claims 2, 8 and 14, which were canceled. Hence the applicants' arguments are directed to the rejections of claims 2, 8, and 14. As an example, amended claim 1 now reads:

1. In a WDM communication system, a transmitter comprising:
 - a plurality of lasers assigned to transmit optical signals on a corresponding plurality of WDM channels;
 - a multiplexer that combines said plurality of optical signals onto a single fiber to form a composite WDM signal;
 - an optical channel monitor that monitors said composite WDM signal to determine wavelengths of said plurality of optical signals;

a control block that controls transmission wavelengths of said plurality of lasers to match wavelengths of said optical signals to desired WDM channel positions; and

an optical attenuator that blocks further transmission of said composite WDM signal when said optical channel monitor determines that a wavelength of at least one of said plurality of lasers is outside a desired range.

As the applicants understand the Examiner's reasoning and the cited references for rejecting claims 2, 8 and 14, "Takatsu et al. further teaches that optical attenuators 2-1 may be used to block transmission of a signal when a channel monitor (i.e., spectrum analyzer 5-2, shown in Figure 8) determines that its wavelength is outside a desired range (column 13, lines 53-60, column 14, lines 1-7).... Takatsu et al. particularly suggest blocking only the signal having the undesired wavelength and do not specifically suggest blocking the composite WDM signal. However, Liden et al. also teach a system related to the system disclosed by Onaka et al., including means for transmitting a wavelength division multiplexed signal (Figures 1 and 2). Liden et al. further teach that an attenuator (Figure 2, element 15) may be used to block further transmission of a composite WDM signal when a monitor has detected an abnormality on the path (column 5, lines 17-28; column 6, line 58; column 7, lines 1-3)."

The applicants respectfully disagree with this rejection and argue that the Examiner has not made a *prima facie* case of obviousness in combining the cited Onaka, Takatsu and Liden references.

First, the Examiner first argues that a non-operational optical amplifier should be considered an attenuator, citing Liden column 5, lines 23-28. That is, "[w]hen the optical pumping energy to the doped fibre section 30 falls a certain level, substantially all the light energy of the incoming optical signals will be absorbed and the signals attenuated rather than amplified." Presumably then by this same reasoning, when an optical amplifier is operational, it is an amplifier since it amplifies and does not attenuate incoming optical signals. Thus the Examiner would combine an element which is not an attenuator when operational. This is not what is recited in applicants' amended claim 1 and see applicants' Fig. 3.

Secondly, the Examiner states that “Liden et al. further teach that an attenuator (Figure 2, element 15) may be used to block further transmission of a composite WDM signal when a monitor has detected an abnormality on the path (column 5, lines 17-28; column 6, line 58; column 7, lines 1-3).” This is a forced and unfair reading of the Liden reference. Rather, the Liden application teaches is that a redundant optical link is preferably kept in a stand-by mode by maintaining an in-line amplifier (a pre-amplifier) in a “glowing” nearly off state by keeping its optical pumping energy below a certain level, while the in-line amplifiers of the working optical link are operated. This prevents undesirable crosstalk between the redundant and operating optical links. The optical pumping energy to the nearly off amplifier is modulated at a low frequency so that a modulated ASE pilot tone can be detected to verify the readiness of the nearly off amplifier to take over. See, e.g., col. 5, lines 33-46. When a problem arises in the working optical link, that link is shut down by turning off one of the link’s optical amplifiers. At the same time, the “glowing” nearly off state amplifier in the redundant optical link is turned on. Col. 6, line 58 – col. 7, line 3.

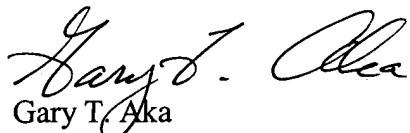
A fair combination of the Liden reference into the Onaka patent is the addition of a redundant optical path to the main optical path 33 of Fig. 5 in the Onaka patent with the operation of the main and redundant paths in accordance with the Liden reference. Note that the Examiner’s citation to Liden col. 6, line 58 – col. 7, line 3 refers to two optical paths, working path 20’ and protection path 20’. “If a problem occurs on the working path 20’, this is detected by one or more of the PIN diode receivers 19’. The pre-amplifier 15’ of the working section will then be turned off, or alternatively configured to ‘glow’, and the pre-amplifier 15 of the protection path 20 can be switched into operation...”. Col. 6, line 58 – col. 7, line 5. Again, this is not what is called for in the applicants’ independent claims.

Hence the combination of the Onaka, Takatsu and Liden does not render amended independent claims 1, 7 and 13 obvious and these claims show be allowed. Furthermore, dependent claims 3-6, 8-12 and 15-18 show also be allowed for at least being dependent upon allowable base claims.

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Therefore, for the amendments above and the remarks directed thereto, the applicants request that the rejections be withdrawn, that claims 1-7, 9-13 and 15-18 be allowed and the case be passed to issue. If a telephone conference would in any way expedite the prosecution of the application, the Examiner is asked to call the undersigned at (408) 446-7687.

Respectfully submitted,


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